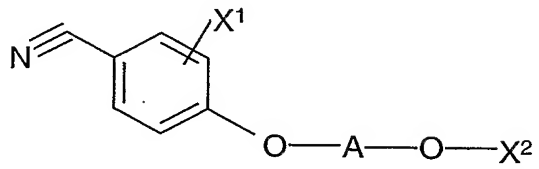
CLAIMS

What is claimed is:

1. A compound of the formula I:



the salts, solvates, and prodrugs thereof, in which;

a) X^1 is represented by halogen, cyano, C_1-C_6 alkoxy, haloalkoxy, or haloalkyl;

b) A is represented by a linear alkylene group containing from 2 to 10 carbon atoms, in which up to 6 hydrogen atoms may optionally be replaced by a substituent independently selected from the group consisting of:

i. halogen,
ii. cyano,
iii. hydroxy,
iv. (C_1-C_{12})alkyl, optionally substituted,
v. (C_2-C_{12})alkenyl, optionally substituted,
vi. (C_2-C_{12})alkynyl, optionally substituted,
vii. (C_3-C_{10})cycloalkyl, optionally substituted,
viii. (C_3-C_{10}) cycloalkyl(C_1-C_6)alkyl, in which the alkyl and cycloalkyl moieties may each be optionally substituted,
ix. $(CH_2)_n$-SR^1,
x. $(CH_2)_n$-O–R^1,
xi. $(CH_2)_n$-NR^1R^2,
xii. $(CH_2)_n$-$COOR^3$ and,
xiii. $(CH_2)_n$-$CONR^4$;

c) X^2 is represented by (C_6-C_{10})aryl, optionally substituted;

d) n, at each occurrence, is independently represented by an integer from 0 to 6;

e) R^1 and R^2 are each independently represented by a substituent selected from the group consisting of hydrogen and $(C_1\text{-}C_6)$alkyl, optionally substituted;

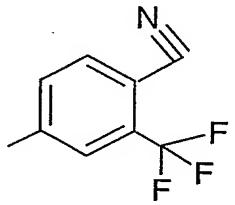
f) R^3 is represented by a substituent selected from the group consisting of hydrogen, and $(C_1\text{-}C_6)$alky, optionally substituted, and;

g) R^4 is represented by a substituent selected from the group consisting of hydrogen, and $(C_1\text{-}C_6)$alkyl, optionally substituted.

2. A compound according to claim 1 in which A is represented by ethylene, propylene, butylenes, or pentylene, any of which may be optionally substituted.

3. A compound according to claim 1 or 2 in which X^1 is trifluoromethyl or chloro and is located at the 3-position of the phenyl ring.

4. A compound according to claim 1, 2, or 3 in which X^2 is represented by:



5. A compound according to claim 1, 2, 3, or 4 in which A is ethylene or propylene and is substituted with at least one substituent represented by $(CH_2)_n\text{-}O\text{–}R^1$ or $(C_1\text{-}C_6)$alkyl.

6. A compound according to claim 1 selected from the group consisting of:

a. 4,4'-[(2S,3S)-butane-2,3-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile])

b. 4,4'-[(2R,3R)-butane-2,3-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

c. 4,4'-[but-1-ene-3,4-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

d. 4,4'-[pentane-1,2-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

e. 4,4'-[(3-methoxypropane-1,2-diyl)bis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

f. 4,4'-[(3-ethoxypropane-1,2-diyl)bis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

g. 4,4'-[[3-(isopropylamino)propane-1,2-diyl]bis[2-(trifluoromethyl)benzonitrile];

h. 4,4'-[(6-methylhexane-1,2-diyl)bis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

i. 4,4'-[octane-1,2-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

j. 4-[1-(4-Cyano-3-trifluoromethyl-phenoxymethyl)-2,2-dimethyl-cyclopropoxy]-2-trifluoromethyl-benzonitrile;

k. 4,4'-[Propane-1,3-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

l. 4,4'-[(2-methylpropane-1,3-diyl)bis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

m. 4,4'-[butane-1,3-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

n. 4-({(3R)-3-[4-cyano-3-(trifluoromethyl)phenoxy]butyl}oxy)-2-(trifluoromethyl)benzonitrile;

o. 4-({(3S)-3-[4-cyano-3-(trifluoromethyl)phenoxy]butyl}oxy)-2-(trifluoromethyl)benzonitrile;

p. 4-{3-[4-cyano-3-(trifluoromethyl)phenoxy]-1,2-dimethylpropoxy}-2-(trifluoromethyl)benzonitrile;

q. 4,4'-[hex-1-ene-4,6-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

r. 4,4'-[(3-methylbutane-1,3-diyl)bis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

s. 4-{[3-(4-cyanophenoxy)-2-ethylhexyl]oxy}bis[2-(trifluoromethyl)benzonitrile];

t. 4,4'-[(2S,4S)-pentane-2,4-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

u. 4,4'-[heptane-1,4-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

v. 4,4'-[hexane-2,5-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

w. 4,4'-[(2S,5S)-hexane-2,5-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

x. 4-({5-[4-cyano-2-(trifluoromethyl)phenoxy]pentyl}oxy)-2(trifluoromethyl)benzonitrile;

y. 4,4'-[hexane-1,5-diylbis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

z. 4,4'-[(3-methylpentane-1,5-diyl)bis(oxy)]bis[2-(trifluoromethyl)benzonitrile];

aa. 4-(1-methoxymethyl-2-phenoxy-ethoxy)-2-trifluoromethyl-benzonitrile;

bb. 4-(1-hydroxymethyl-2-phenoxy-ethoxy)-2-trifluoromethyl-benzonitrile;

cc. (1R)-4-(1-hydroxymethyl-2-phenoxy-ethoxy)-2-trifluoromethyl-benzonitrile;

dd. (1R)-4-(1-methoxymethyl-2-phenoxy-ethoxy)-2-trifluoromethyl-benzonitrile;

ee. (1S)-4-(1-methoxymethyl-2-phenoxy-ethoxy)-2-trifluoromethyl-benzonitrile;

ff. 2-chloro-4-(2-methoxy-1-phenoxymethyl-ethoxy)-benzonitrile;

gg. 2-chloro-4-(1-phenoxymethyl-butoxy)-benzonitrile;

hh. 2-chloro-4-(1-phenoxymethyl-propoxy)-benzonitrile;

ii. 2-chloro-4-(1-phenoxymethyl-butoxy)-benzonitrile;

jj. 2-chloro-4-[1-(4-methoxy-phenoxymethyl-propoxy)-benzonitrile;

kk. 2-chloro-4-[1-(2-methoxy-phenoxymethyl-propoxy)-benzonitrile;

ll. 2-chloro-4-[1-methyl-phenoxy-ethoxy)-benzonitrile;

mm. 4-[4-(4-cyano-3-trifluoromethyl-phenoxy)- 2-hydroxy-butyloxy]-2-trifluoromethyl-benzonitrile;

nn. 4-[3-(4-cyano-3-trifluoromethyl-phenoxy)- 2-cyclohexyl-propyloxy]-2-trifluoromethyl-benzonitrile;

oo. 4-[3-(4-cyano-3-trifluoromethyl-phenoxy)- 2-cyclohexyl-propyloxy]-2-trifluoromethyl-benzonitrile;

pp. 4-[3-(4-cyano-3-trifluoromethyl-phenoxy)- 2-chloro-propyloxy]-2-trifluoromethyl-benzonitrile;

qq. 4-[8-(4-cyano-3-trifluoromethyl-phenoxy)- 2-chloro-4-hydroxy-octyloxy]-2-trifluoromethyl-benzonitrile;

rr. 4-[10-(4-cyano-3-trifluoromethyl-phenoxy)- 2-methylcyclopentyl-octyloxy]-2-trifluoromethyl-benzonitrile;

ss. 4-[10-(4-cyano-3-trifluoromethyl-phenoxy)- decyloxy]-2-trifluoromethyl-benzonitrile;

tt. 4-[7-(4-cyano-3-trifluoromethyl-phenoxy)-2-cyano-4-methyl-6-hydroxy-heptyloxy]-2-trifluoromethyl-benzonitrile;

uu. 4-(3-(3-hydroxy-4-fluoro-phenoxy)-propoxy)-2-trifluoromethyl-benzonitrile;

vv. 4-(2-cyano-4-dimethylamino-8-phenoxy-octyloxy)-2-trifluoromethyl-benzonitrile;

ww. 4-(2-dimethylamino-2-(4-cyano-phenoxy)-ethyloxy)-2-trifluoromethyl-benzonitrile;

xx. 4-(1-cyclopentyloxymethyl-3-(4-hydroxy-phenoxy)-propoxy)-2-trifluoromethyl-benzonitrile; and

yy. 4-(2-methyl-4-dimethylamino-8-phenoxy-octyloxy)-2-trifluoromethyl-benzonitrile.

7. Use of a compound according to any one of claims 1-6 as a medicine.

8. Use of a compound according to any one of claims 1-6 in the manufacture of a medicament for inhibiting activation of the androgen receptor.

9. Use of a compound according to any one of claims 1-6 in the manufacture of a medicament for alleviating a condition selected from the group consisting of hormone dependent cancers, benign hyperplasia of the prostate, acne, hirsutism, excess sebum, alopecia, premenstrual syndrome, lung cancer, precocious puberty, osteoporosis, hypogonadism, age-related decrease in muscle mass, and anemia.

10. A pharmaceutical composition comprising a compound according to any one of claims 1-6 in admixture with one or more pharmaceutically acceptable excipients.

11. A topical pharmaceutical formulation comprising a compound according to any one of claims 1-6 in admixture with or more pharmaceutically acceptable excipients suitable for dermal application.

12. An article of manufacture comprising a compound according to any one of claims 1-6 packaged for retail distribution, which advises a consumer how to utilize the compound to alleviate a condition selected from the group consisting of acne, alopecia, and oily skin.